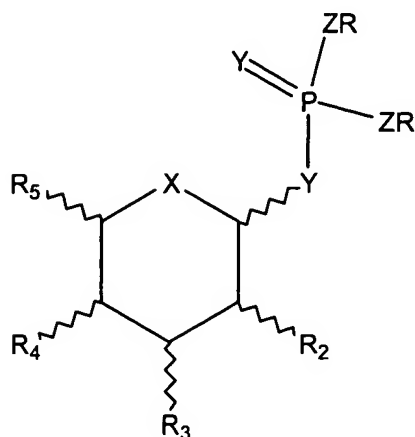


## Claims

1. **(previously presented)** A compound represented by structure 1:



1

wherein

X represents O;

Y represents independently for each occurrence O;

Z represents independently for each occurrence O;

R is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aralkyl, heteroaryl, and heteroaralkyl;

R' is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, acyl, and sulfonyl;

R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> are independently selected from the group consisting of R<sub>6</sub>, -OR', -SR', -NR'<sub>2</sub>, -OSO<sub>3</sub>H, and -OPO<sub>3</sub>H<sub>2</sub>;

R<sub>5</sub> is selected from the group consisting of R<sub>6</sub>, -(CR<sub>2</sub>)<sub>n</sub>OR', -(CR<sub>2</sub>)<sub>n</sub>SR', and -(CR<sub>2</sub>)<sub>n</sub>NR'<sub>2</sub>;

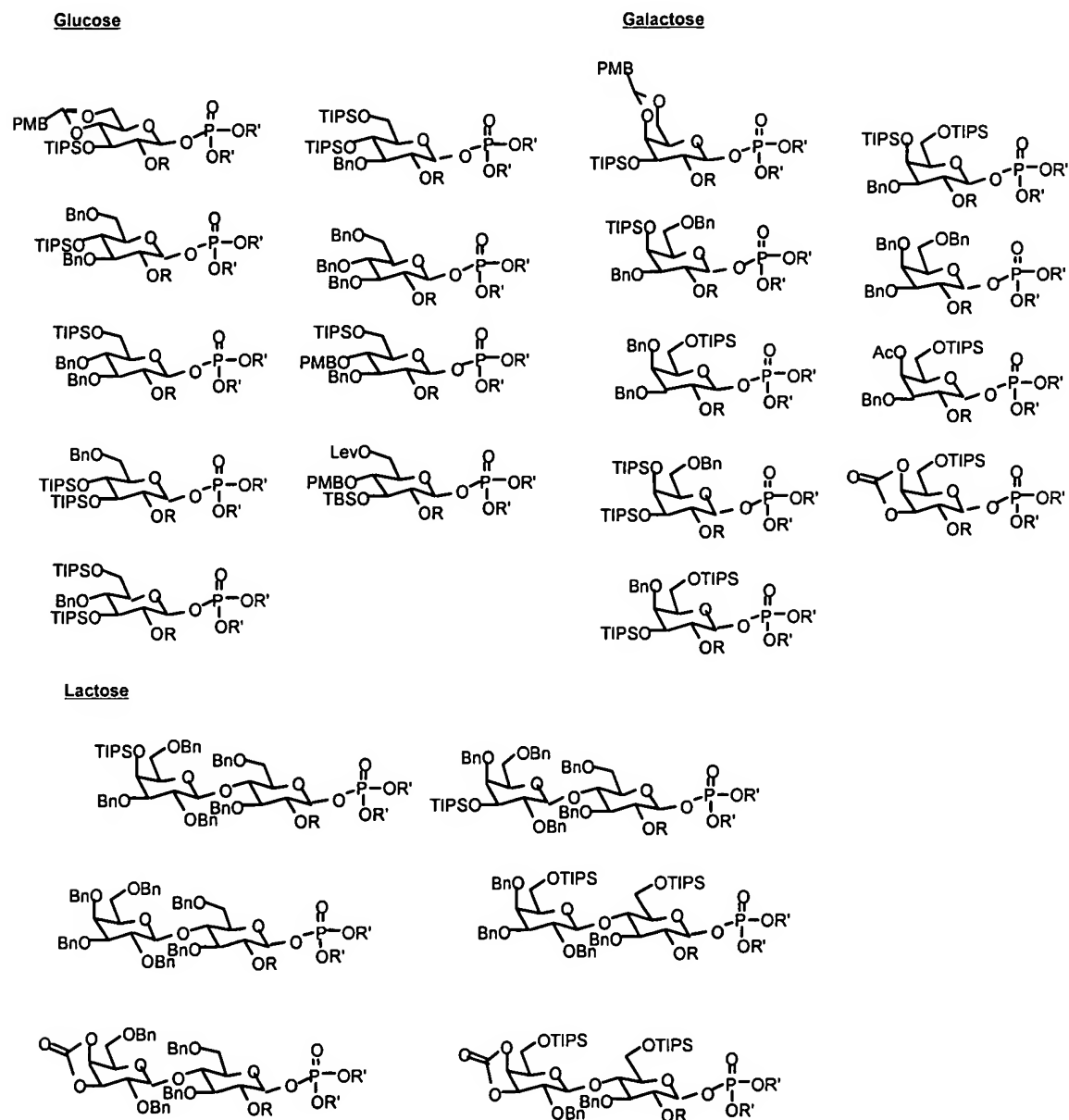
R<sub>6</sub> is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, and heteroaralkyl;

and

n is an integer selected from the range 0 to 10 inclusive.

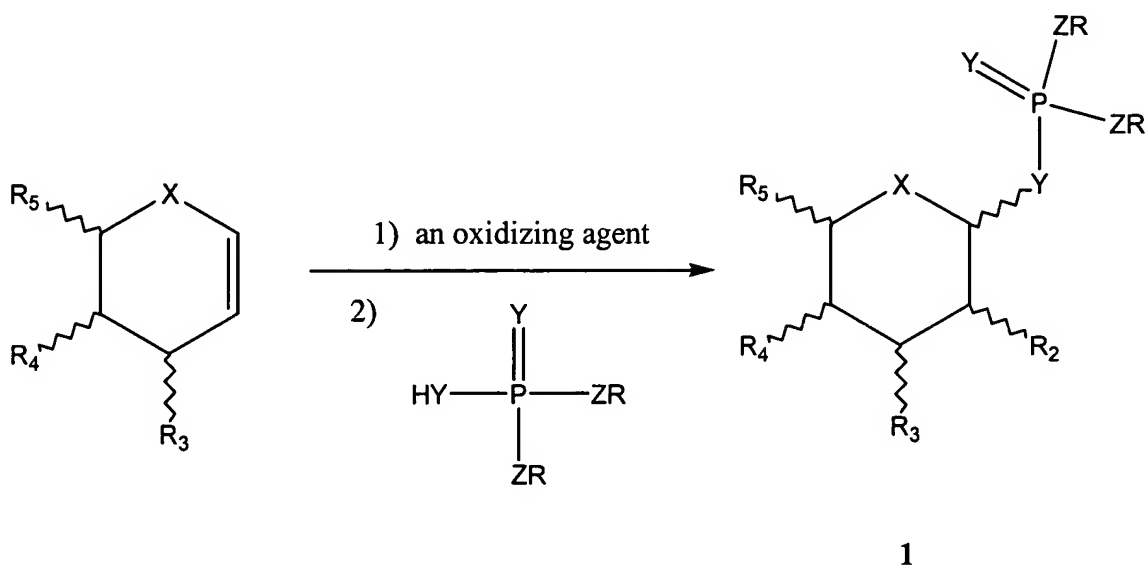
Claims 2-22. (canceled)

23. (original) The compound of claim 1, wherein said compound is represented by one of the following structures:



Claims 24-41. (canceled)

42. (previously presented) A method of synthesizing a compound represented by 1, wherein said method is represented by the following scheme:



wherein

X represents O;

Y represents independently for each occurrence O;

Z represents independently for each occurrence O;

the oxidizing agent is selected from the group consisting of dioxiranes, percarboxylates, and persulfates;

R is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, and heteroaralkyl;

R' is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, acyl, and sulfonyl;

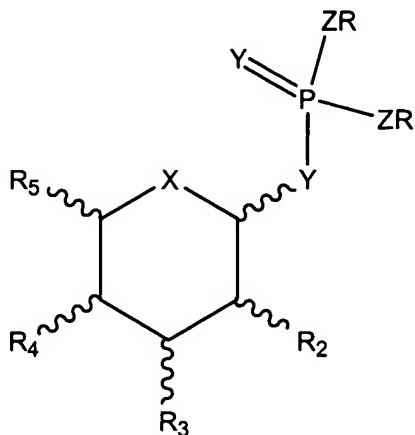
R<sub>2</sub> is OR';

R<sub>3</sub>, and R<sub>4</sub> are independently selected from the group consisting of R, -OR', -SR', -NR'<sub>2</sub>, -OSO<sub>3</sub>H, and -OPO<sub>3</sub>H<sub>2</sub>;

R<sub>5</sub> is selected from the group consisting of R, -(CR<sub>2</sub>)<sub>n</sub>OR', -(CR<sub>2</sub>)<sub>n</sub>SR', and -(CR<sub>2</sub>)<sub>n</sub>NR'<sub>2</sub>;  
and

n is an integer selected from the range 0 to 10 inclusive.

43. (original) The method of claim 42, wherein the oxidizing agent is a dioxirane.
44. (original) The method of claim 43, wherein the oxidizing agent is dimethyl dioxirane (DMDO).
45. (previously presented) A compound represented by structure 2:



2

wherein

- X represents O;
- Y represents independently for each occurrence O;
- Z represents independently for each occurrence O;
- R represents independently for each occurrence aryl;
- R' is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, acyl, and sulfonyl;
- R<sub>2</sub> is selected from the group consisting of R<sub>6</sub>, -OR', -SR', -NR'<sub>2</sub>, -OSO<sub>3</sub>H, -OPO<sub>3</sub>H<sub>2</sub>;
- R<sub>3</sub>, and R<sub>4</sub> are independently selected from the group consisting of R<sub>6</sub>, -OR<sub>7</sub>, -SR', -NR'<sub>2</sub>, -OSO<sub>3</sub>H, and -OPO<sub>3</sub>H<sub>2</sub>;

$R_5$  is selected from the group consisting of  $R_6$ ,  $-(CR_2)_nOR_7$ ,  $-(CR_2)_nSR'$ , and  $-(CR_2)_nNR'_2$ ;

$R_6$  is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, aralkyl, heteroaryl, and heteroaralkyl;

$R_7$  is selected, independently for each occurrence, from the group consisting of H, alkyl, heteroalkyl, aryl, heteroaryl, heteroaralkyl, and sulfonyl;

and

$n$  is an integer selected from the range 0 to 10 inclusive.